

**Professor Michael Geist**  
**Canada Research Chair in Internet and E-commerce Law**  
**University of Ottawa, Faculty of Law**  
**Ottawa, ON**

### **Digital Economy Strategy Consultation Submission**

My name is Michael Geist. I am a law professor at the University of Ottawa, Faculty of Law, where I hold the Canada Research Chair in Internet and E-commerce Law. I am also a syndicated weekly columnist on law and technology issues for the Toronto Star and the Ottawa Citizen. I have been actively engaged on a wide range of digital economy issues for many years. These include copyright, telecom and broadcast issues such as net neutrality, privacy, e-commerce, and Internet law. I served on the National Task Force on Spam and currently sit on the Privacy Commissioner of Canada's External Advisory Board.

I was grateful for the opportunity to participate as a speaker at the Minister of Industry's 2009 Digital Economy conference. This submission supplements those comments with additional specifics on recommended reforms. My comments are provided in my personal capacity as a Canadian with a keen interest in the future of the Canadian digital economy.

### **General Issues – Who Leads, Who Pays, What Principles?**

The consultation identifies very specific areas for discussion including digital technologies, building a digital infrastructure, growing the ICT industry, digital content, and digital skills. I will seek to address many of these issues. Before doing so, however, I will address several general issues that are critically important to a successful digital economy strategy that do not easily slot within the consultation's pre-defined categories.

#### i. Who Leads the Digital Economy Strategy?

The starting point for any digital economy strategy is leadership. Canada needs digital leaders, including a Chief Technology Officer and cabinet-level attention to the issue. The not-so-secret reality of the Industry Minister portfolio is that it is simply far too large to give all the issues under its mandate the necessary attention. Manufacturing, automotive, telecom, foreign investment, competition, consumer affairs, Statistics Canada, intellectual property, scientific research and dozens of other issues all fall under the same umbrella.

While this was the intention in the early 1990s when Industry Canada was formed as a "super Ministry" that merged Consumer and Corporate Affairs with Communications, this experiment has failed. With so many issues demanding attention, it should come as little surprise that many issues either fall under the radar screen or take months to be addressed.

Industry Minister Clement remains the obvious point person for digital strategy leadership, yet the consultation document demonstrates that the issue is not so clear cut. Canadian Heritage Minister James Moore and Minister of Human Resources and Skills Development Diane Finley both contributed to the document, leading to different points of emphasis among the chapters. Moreover, many other ministers - including public safety, health, the environment, trade, and finance – could reasonably argue for a role in the process.

Given the broad scope of digital issues, Canada needs a single point of leadership with the ability to advance the strategy at the cabinet table and to cut across sectors. Many of our trading partners have created ministerial positions (or at least junior ministers) with responsibility for specific digital issues. For example, Australia has both a Minister for Innovation, Industry, Science and Research and a Minister for Broadband, Communications and the Digital Economy.

If Minister Clement is to lead, he needs clear responsibility and a mandate on the issue, not the prospect of cobbling together support from cabinet colleagues zealously guarding their turf after Canadians have spoken.

#### ii. Who Pays for the Digital Economy Strategy?

Even with leadership addressed, a successful national digital strategy requires funding. The question of how the strategy will be paid for is omitted from the consultation but represents a basic pre-requisite. While not all aspects of the strategy will require significant investments – many policy solutions involve minimal government expenditures – developing digital skills training programs, ensuring broadband access for all Canadian communities, and fostering the creation and promotion of Canadian new media are just some of the objectives that come with a price tag attached.

The most obvious source of funds comes from the consultation itself. The digital television transition, which seems to have stalled in recent months but is still nominally set for August 2011, should lead to spectrum re-allocation and auction. The transition holds the dual promise of injecting new competition into the wireless sector and filling government coffers with billions in new revenue. Those billions should be earmarked for the digital economy strategy, effectively enabling the strategy to pay for itself.

#### iii. What Guiding Principle for the Digital Economy Strategy?

I believe the government should adopt the principle of “openness” as the guiding principle for its digital economy strategy. In recent years, an open approach has found increasing favour for a broad range of technology policy issues and has been incorporated into many strategy documents. For example, New Zealand identified “openness is a central principle of [its] Digital Strategy 2.0.”

The consultation document includes a brief reference to open access for government-funded research, but it seemingly ignores the broader potential for a strategy with openness policies as a key foundational principle.

Where might an openness principle make sense?

First, open government policies, including the use of the Internet to increase transparency and the adoption of open licences to government content to make it more readily usable and accessible. Canadian municipalities such as Vancouver, Edmonton, Toronto, and Ottawa have provided leadership in this area in recent months and the federal government could use the digital strategy process to follow their example by committing to an open access approach to government data.

Second, open access to publicly-funded research could be mandated throughout the major federal granting agencies. Many countries have implemented legislative mandates that require researchers who accept public grants to make their published research results freely available online within a reasonable time period. Canada has emphasized research funding by committing millions to attracting some of the world's leading researchers, yet it has lagged on open access and the digital strategy provides an ideal opportunity to catch-up.

Third, the strategy could enhance support for open source software, with a clear government mandate to level the playing field between proprietary and open source software. Earlier this year, a Quebec court ruled that the provincial government violated the law when it purchased software from Microsoft without considering offers from other vendors. The federal government has some policies on point, but more can be done to encourage open source software adoption for the benefit of taxpayers and technological development in Canada.

Fourth, network open access requirements mandating certain openness standards in the use of the spectrum that is crucial for wireless telecommunications. For consumers tired of the "walled garden" approach of some providers that use both contracts and technology to lock-in consumers, open spectrum policies would spur new innovation and heightened competition by facilitating greater consumer mobility and promote the introduction of new services not tied to a single wireless provider.

Fifth, open spectrum that reserves some of the spectrum scheduled for auction for unlicensed uses. While there is great potential to use auction proceeds to fund some digital strategy initiatives such as rural broadband deployment, reserving some of that spectrum for open purposes – much like wifi - should be another piece of the puzzle.

Sixth, an open investment policy that tears down some of the barriers to foreign participation in the Canadian digital marketplace. While reducing restrictions is viewed by some groups as a threat to Canadian cultural policy, there should be ways to craft rules that open the door to new foreign participants but maintain many longstanding cultural policies.

The remainder of this submission focuses on issues raised in three of the consultation areas: building a digital infrastructure, capacity to innovate, and digital content.

1. Building a Digital Infrastructure

a. Broadband Networks

Canadian telecommunications networks were once the envy of the world. No longer. While there is some debate on the methodology and validity of the many studies that have compared wireless and broadband networks worldwide, there is no disputing that none rank Canada as a leader in either area. Indeed, while Canadian broadband networks were once viewed as a global leader – Canada ranked as high as second only a decade ago on some metrics – today it is at best a middle of the pack player with mounting frustration among both consumers and businesses reliant on a world-class digital infrastructure.

Ensuring that all Canadians have access to high-speed networks that rival current leaders such as Japan and South Korea should be a top-priority. Access to the Internet is no longer a luxury - for millions of Canadians it is necessity that serves as a foundation for education and life-long learning initiatives, access to knowledge, health care, government services, financial activity, entertainment, and communication.

Given the Internet's importance, government cannot adopt a hands-off approach, though it must recognize that its role differs in the urban and rural markets. In urban communities, most of which are serviced by a choice of two broadband options (cable or DSL), the focus ought to be on the competitive environment and the assurance that the entire community can afford access.

The governmental role in rural Canada ought to be a different one. In those communities, many of which lie on the outskirts of major cities, the concern revolves around connectivity, not competition, since there is often no cable or DSL broadband option available to local residents.

The Canadian government has been struggling with this issue for many years. In 2000, it established the Broadband Task Force, which recommended that the government address fears of a digital divide within the country by providing financial support for network development in rural communities. Those recommendations were never fully implemented as successive industry ministers failed to obtain the necessary support within cabinet.

The solution lies not in simply handing over millions in economic assistance to the telecommunications providers, but rather for government to support local, community-owned networks that operate for the public benefit. While the telecommunications providers might be called upon to establish the services, publicly funded networks would

remain in public hands, with the communities retaining the flexibility to offer reduced fees or alternate options.

Moreover, the plan could involve funding for rural broadband initiatives (the 2009 budget provided less than the Conservatives promised during the prior election campaign), tax incentives to promote investment in fast fibre-to-the-home services, and the removal of foreign investment restrictions to encourage new entrants.

b. Net Neutrality

The Canadian Radio-television and Telecommunications Commission issued its much-anticipated Internet traffic management ruling in 2009, better known as the net neutrality decision. The case attracted national interest as the CRTC established several key requirements for Canada's Internet providers.

These included new transparency obligations that forced ISPs to disclose their network management practices, such as why the practices were introduced, who will be affected, when it will occur, and how it will impact users' Internet experiences (down to the specific impact on speeds). The CRTC also opened the door to complaints about network management practices by establishing a test that any harm to users be as little as reasonably possible.

Eight months later, there have been complaints about the carriers' failure to comply with the disclosure requirements and concerns that some traffic management practices may not be consistent with CRTC requirements.

For example, Rogers andCogeco continuously throttle all upstream P2P traffic. Both providers admit that the limits on their service occur on a 24 hour, 7-day basis, regardless of whether the network is actually experiencing any congestion. Cogeco claims "it is [our] experience that congestion created by P2P can occur at any time within a 24-hour period." This may be true, but the failure to limit throttling activities to instances of actual congestion is surely grounds for a CRTC complaint.

While Bell limits its throttling practices to specified periods, its defined period is so broad that it too may be the target of a complaint. Bell discloses that its throttling practices, which target upload and download traffic, runs from 4:30 pm to 2:00 am. By covering nearly half the day, the company could face questions about whether the policy limits harm as much as reasonably possible.

The CRTC's net neutrality guidelines garnered well-deserved plaudits, yet the true test will be whether the guidelines will be enforced effectively. The government can advance the issue in several meaningful ways without necessarily tabling net neutrality legislation.

Critics of the CRTC approach rightly note that the onus falls to consumers to compile evidence of traffic management practices that run afoul of the commission's test and file

complaints. When asked about the issue in the House of Commons, Industry Minister Clement stated that he is "watching those providers very closely and I do not want to see a situation where consumers are put at risk in terms of their access to the Internet." He can go several steps further by asking the CRTC to conduct regular compliance audits of ISP traffic management practices and by providing financial support to consumer groups who wish to conduct their own investigations.

The federal government also can play a significant role in establishing neutrality for wireless Internet access. The CRTC acknowledged that many of the same issues arise in the wireless context and that it expects wireless carriers to follow the same guidelines. Within the next two years, the federal government will conduct another spectrum auction as part of the digital television transition. The government could incorporate net neutrality requirements directly into the bidding process, effectively mandating neutrality into new wireless services.

c. Digital Television Transition

The digital television transition - Canada will shift from analog to digital television in 2011 - will free up spectrum that could be used to promote new innovation by reserving space for unlicensed uses (sometimes referred to as "wifi on steroids") and encourage the entry of new competitors. The shift will require some significant investments, however, since broadcasters must phase out their analog transmitters in favour of new digital equipment. There are mounting concerns that Canadian broadcasters will not be ready in time and a Canadian digital economy strategy must address this issue.

Canada finds itself lagging more than two years behind the United States in the transition from analog to digital television broadcasting, a process that could leave millions of Canadians without access to over-the-air television signals.

The link between the digital television transition and telecommunications stems from the freed-up spectrum that will become available as broadcasters abandon their analog transmissions. This spectrum - known as the 700 MHz spectrum - opens up a host of possibilities for new innovation, competitors, and open Internet access.

The 700 MHz spectrum will lead to another spectrum auction that could lead to further entrants into the Canadian wireless market. In fact, some speculate that some would-be bidders stayed out of the most recent AWS spectrum auction (which raised over \$4 billion in revenue for the government), in the hope of grabbing some of the 700 MHz spectrum since it is viewed as technically superior (for example, it more easily penetrates walls, making it ideal for delivering wireless high-speed Internet services).

The government has the chance to dramatically reshape the Canadian wireless market by establishing a bold policy approach to the auction. For example, as pressure mounts to open up the Canadian market to foreign competition, this auction could provide the entry point. By permitting foreign investors to bid for majority stakes in 700 MHZ spectrum, the government could simultaneously invite increased competition and promote new

investment in the Canadian marketplace.

Moreover, the rules governing the use of the spectrum will also attract considerable attention. In the United States, the Federal Communications Commission has adopted some "open access" requirements, mandating certain openness standards in the use of this spectrum. For consumers tired of the "walled garden" approach of current providers that use both contracts and technology to lock-in consumers, open spectrum policies would spur new innovation and heightened competition by facilitating greater consumer mobility and promote the introduction of new services not tied to a single wireless provider.

In addition to the auctioned spectrum, there is the potential for further unused spectrum to be made available for public use. Known as "white spaces", this spectrum was previously used by broadcasters to ensure that their analog broadcasts did not interfere with one another. As the U.S. marches along on this policy front, Canada has not even left the starting gate. Indeed, it appears increasingly likely that the U.S. approach will be fully implemented by the time Canada gets its act together. While that points to a carbon copy approach, it will ultimately fall to Minister Clement to make the call and to set in motion policies that could change the way Canadians access broadcast, telecom, and Internet services.

As noted at the outset of this submission, the need for a timely transition is particularly important given the potential to use a portion of the spectrum proceeds, which last time topped \$4 billion, toward funding for the digital economy strategy, particularly the development of broadband networks.

d. Foreign Investment

A Canadian digital action plan should help promote innovation by removing several long-standing barriers. This includes lifting foreign investment restrictions in the telecommunications sector. The need for reforming foreign investment restrictions was illustrated by Globalive's difficult entry into the Canadian market. Bell Canada, Telus Corp., and Rogers Communications, the big three incumbent carriers, unsurprisingly opposed the new rival. First they lobbied against a set-aside of spectrum for new entrants. When that failed, they argued Globalive failed to comply with the Telecommunications Act's foreign control restrictions.

In October 2009, the CRTC agreed. While Industry Canada previously concluded the company met the Canadian control requirements for the purposes of the Radiocommunications Act when it bid for spectrum, the CRTC concluded that its ownership and control structure do not meet the legal requirements to operate as a wireless carrier.

Although the federal cabinet eventually overruled the CRTC, this is hardly the first time the foreign control issue has been raised in Canada. There have been earlier recommendations to scrap the requirements, most recently in the 2006 Telecom Policy

Review Committee report, which concluded that Canada has "one of the most restrictive and inflexible set of rules limiting foreign investment in the telecommunications sector" among all OECD countries.

With hindsight, it should have been obvious that the foreign control issue would be the elephant in the room around the government's efforts to inject greater competition into the Canadian telecom sector. There is little doubt that officials - not to mention Canadian consumers - were anxious to encourage new entrants. While the set-aside in the spectrum auction guaranteed the new entrants, leaving the foreign control rules untouched meant the job was only half-done.

The days of retaining Canadian control over physical telecommunications infrastructure connected to millions of homes are over. Wireless networks involve significant investments in cellphone towers, but not direct connectedness into individual homes. Further, the notion that Canadian control guarantees Canadian jobs is also part of a by-gone era. Canadian carriers regularly outsource some of their customer service jobs out of the country. Meanwhile, other parts of the organization - retail and business sales as well as network building - involve jobs that will remain in Canada regardless of a company's country-of-origin. While some head office jobs may be at risk, new companies operating in Canada could potentially create more jobs, not fewer.

It is tempting to blame the CRTC or the incumbent telecom providers for the current situation, but the real culprit lies with outdated legislation that prioritizes Canadian ownership over a competitive Canadian marketplace. The solution lies in changing the law to facilitate foreign ownership of common carriers - both to facilitate immediate competition and to pave the way for more foreign bidders in the next round of spectrum auctions.

## 2. Capacity to Innovate

### a. Consumer Confidence and Trust

An essential element in fostering Canada's capacity to innovate is to ensure that the Canadian legal framework enhances consumer confidence and trust in the online marketplace. The government has already made some moves in this direction and should prioritize legislative initiatives such as anti-spam legislation and privacy law reform.

#### i. Spam

The *Fighting Internet and Wireless Spam Act* is a repeat of the anti-spam bill that passed through the House of Commons last year but died after Parliament prorogued. Since the new bill reflects roughly the same compromise that garnered all-party support, it should – and deserves – swift passage.

#### ii. Security Breach Disclosure

The *Safeguarding Canadians' Personal Information Act* amends Canada's existing privacy legislation by establishing new exceptions for businesses and new powers for law enforcement. The centrepiece is a long overdue security breach disclosure requirement. Over the past seven years, virtually every U.S. state has enacted disclosure rules that compel organizations that suffer a security breach that places personal information at risk to promptly disclose that fact to the affected individuals. By mandating notification, the laws ensure that individuals are better able to guard against identity theft by closely monitoring their credit card bills, bank accounts, and credit reports for any unusual activity.

While the bill is better than the current situation where there is no security breach disclosure requirement, it falls far short of the rules found elsewhere. The government's proposal sets a very high threshold for disclosure of a breach and contains no clear penalties for non-disclosure.

By comparison, the California law establishes a threshold of whether an unauthorized person acquired the information, not whether there is real risk of significant harm (other states merely require harm, not significant harm). Moreover, the California law requires disclosure in the most expedient time possible and without unreasonable delay - far quicker than the Canadian plan.

Some states also establish tough penalties for failure to promptly notify. For example, Florida's law provides for penalties of up to US\$500,000 for failure to notify affected individuals and up to US\$50,000 for failure to document non-notifications of security breaches.

Security breach disclosure was widely recognized as a major hole in the Canadian law framework, yet this proposal is a disappointment that falls short of striking the right balance between protecting Canadians, encouraging appropriate safeguards of personal information, and guarding against overwhelming Canadians with too many notices.

In fact, with no penalties for failure to notify security breaches, the provisions may do more harm than good. If it becomes law, Canadians will expect to receive notifications in the event of a breach, but companies may err on the side of not notifying, safe in the knowledge that there are no established financial penalties for failing to do so. Canada needs mandatory security breach disclosure legislation, but the current bill should be reformed with tougher penalties and a lower threshold for disclosure.

### iii. Privacy Act

Government should lead by example on the privacy front by updating the Privacy Act, which falls woefully short in meeting the standards of a modern privacy act. Indeed, at a time when government is expected to be a model, it instead requires far less of itself than it does of the private sector. A key reform is the limiting collection principle. A hallmark of private sector privacy law, the government should similarly be subject to collecting

only that information that is strictly necessary for its programs and activities. The limiting collection principle could assist in countering a growing and increasingly recognized concern – identity theft.

Strengthening protections also necessitates improving the Act's enforceability. The current Federal Court review powers should be broadened to include complaints beyond refusal of information and the power to award damages should be added. Moreover, a more formalized approach to transborder information sharing agreements is needed.

The failure to engage in meaningful Privacy Act reform may be attributable in part to the lack of public awareness of the law and its importance. The Privacy Commissioner has played an important and increasingly innovative role in educating the public about PIPEDA and broader privacy concerns. The Privacy Act desperately needs to include a similar mandate for public education and research.

#### iv. Lawful Access

The push for new Internet surveillance capabilities – dubbed the “lawful access” initiative - dates back to 1999, when government officials began crafting proposals to institute new surveillance technologies within Canadian networks along with additional legal powers to access surveillance and subscriber information. Over the past decade, lawful access has stalled despite public consultations, bills that have died on the order paper, and even a promise from former public safety minister Stockwell Day to avoid mandatory disclosure of personal information without court oversight.

Without a doubt, society needs to ensure that police have the ability to deal with serious crime online. Yet, public concern about lawful access comes directly from privacy fears and the absence of compelling evidence that the current system has created serious barriers to police investigations. The continued emphasis on lawful access without evidence of harm and balance within the legislation threatens to undermine public confidence in the Internet. Given the potential for misuse, the onus should be on law enforcement to demonstrate how the current system has harmed investigations and then we should work on ensuring that there is always - including for customer name and address information - appropriate court oversight.

### 3. Digital Content

#### a. Copyright Reform

Copyright law reform is an integral part of a digital economy strategy and the law should be updated by implementing provisions that comply with international treaties and meet legitimate consumer expectations. Copyright has long been viewed as one of the government's most difficult and least rewarding policy issues. It attracts passionate views from a wide range of stakeholders, including creators, consumers, businesses, and educators and it is the source of significant political pressure from the United States.

Opinions are so polarized that legislative reform is seemingly always the last resort that only comes after months of delays. Despite the challenges, the recently introduced Bill C-32 represent a serious effort to find compromise positions on many thorny copyright issues.

Unfortunately, the anti-circumvention provisions (often referred to as legal protection for digital locks) - unquestionably the biggest and most controversial digital copyright issue - is the one area where there is no compromise. Despite a national copyright consultation that soundly rejected inflexible protections for digital locks on CDs, DVDs, e-books, and other devices, the government has caved to U.S. pressure and brought back rules that mirror those found in the United States. These rules limit more than just copying as they can also block Canadian consumers from even using products they have purchased.

Bill C-32 features three types of provisions: sector-specific reforms, compromise provisions, and the no-compromise digital lock rules.

The sector-specific reforms are designed to address a single constituency or stakeholder concern. These reforms include something for almost everyone: new rights for performers and photographers, a new exception for Canadian broadcasters, new liability for BitTorrent search services, as well as the legalization of common consumer activities such as recording television shows and transferring songs from a CD to an iPod. In fact, there is even a “YouTube” user-generated content remix exception that grants Canadians the right to create remixed work for non-commercial purposes under certain circumstances. Many of these reforms are a positive step forward.

There are a number of areas where the government has worked toward a genuine compromise. This includes reform to Canada’s fair dealing provision, which establishes when copyrighted works may be used without permission.

The government rejected both pleas for no changes as well as arguments for a flexible fair dealing that would have opened the door to courts adding exceptions to the current fair dealing categories of research, private study, news reporting, criticism, and review. Instead, it identified some specific new exceptions that assist creators (parody and satire), educators (education exception, education Internet exception), and consumers (time shifting, format shifting, backup copies).

The Internet provider liability similarly represent a compromise, as the government is sticking with a “notice-and-notice” system that requires providers to forward allegations of infringement to subscribers. The system is costly for the providers, but has proven successful in discouraging infringement.

It also compromised on the statutory damages rules that create the risk of multi-million dollar liability for cases of non-commercial infringement. The new rules reduce non-commercial liability to a range of \$100 to \$5,000, which is not insignificant but well below the \$20,000 per infringement cap currently found in the law.

All these attempts at balance should be welcomed, yet they are undermined by the no-compromise position on digital locks.

The foundational principle of the new bill is that anytime a digital lock is used, it trumps virtually all other rights. This means that both the existing fair dealing rights and Bill C-32's new rights all cease to function effectively so long as the rights holder places a digital lock on their content or device. Moreover, the digital lock approach is not limited to fair dealing - library provisions include a requirement for digital copies to self-destruct within five days and distance learning teaching provisions require the destruction of course materials 30 days after the course concludes.

The government could have introduced a compromise provision that would have allowed for compliance with international treaties, protection for digital locks and the preservation of the copyright balance. In failing to strike that balance, the government has introduced a flawed, but potentially fixable bill.

I have written extensively about potential reforms to the digital lock provisions in Bill C-32. A starting position should be clarification that it is not an infringing act to circumvent for lawful purposes. This simple provision would allow the law to target large scale infringement but preserve user rights already contained in the law. Moreover, lawmakers should consider dropping the ban on the distribution or marketing of devices that can be used to circumvent. If it is acknowledged that there are legitimate reasons for circumventing a digital lock, Canadians should be able to legally acquire the tools they need to do so.

b. Open Data

The federal government has an important role to play in the digital content realm in ensuring that its own content – or content produced on its behalf – is readily and freely available in digital form. After years of closed, "walled garden" approaches, the world is embracing the benefits of openness. The City of Vancouver recently adopted an openness policy that establishes a preference for open standards, open source software, and open government data. The federal government should do the same, promoting the use of cost-effective open source software and the benefits of commercial and civic activity around accessible government data.

Open data initiatives have generated dozens of commercial and non-commercial websites that add value to the government data. Some make the data more understandable by using interactive maps to provide visuals about where activities are taking place (e.g. government stimulus spending). Others make the data more accessible by offering services to customize or deliver government information (e.g. postal codes to allow public interest groups to launch advocacy campaigns).

The crucial aspect behind these initiatives is that the government makes the data available in open formats free from restrictive licenses so companies and civil society groups can

create innovative websites, tools, and online services.

Late in 2009, the global open data movement received a big boost in three countries that is sure to leave Canadians wondering why their government has been so slow to move on this issue. The U.S. issued its much-anticipated Open Government Directive, instructing every federal department and agency to take specific actions to open its operations to the public. Rather than simply identifying principles, the directive issued strict timelines for action.

For example, it requires agencies to publish "information online in an open format that can be retrieved, downloaded, indexed, and searched by commonly used web search applications. An open format is one that is platform independent, machine readable, and made available to the public without restrictions that would impede the re-use of that information." Each agency is required to publish at least three datasets within 45 days and to establish an open government section on its website.

Not to be outdone, the Australian government convened the Government 2.0 Task Force to examine how to make government information more accessible and usable. In their final report, the Task Force's starting premise is that "public sector information is a national resource and that releasing as much of it on as permissive terms as possible will maximise its economic and social value to Australians and reinforce its contribution to a healthy democracy."

Consistent with that view, the Task Force recommended that public sector information should be free, based on open standards, easily discoverable, machine-readable, and freely reusable. Since Australian government data is subject to crown copyright restrictions (much like Canada), the Task Force recommended releasing government data under a Creative Commons attribution licence.

This means that the government will still maintain copyright, but it freely licences the work for re-use with no need for further permissions or compensation (only attribution is required). This approach, which should be emulated by Canada, provides an efficient means of freeing up government works without the need for legislative change.

The British government also made new open government commitments. Noting the success of recent initiatives - an online graffiti reporting site resulted in an 8 percent reduction in graffiti and a 30 percent reduction in complaints - it adopted new public data principles similarly based on the release of public datasets available for reuse at no charge. It now promises to release more public data, including health, weather and traffic datasets, under open licences that enables free reuse, including commercial reuse.

c. Open Access

Digital content strategies should also cover access to taxpayer-funded research. In recent months, the United States and the European Union have taken strong steps toward making their research openly available, with legislative mandates that require researchers

who accept public grants to make their published research results freely available online within a reasonable time period.

The basic principle behind open access is to facilitate public access to research, particularly research funded by taxpayers. This can be achieved by publishing in an open access journal or by simply posting a copy of the research online.

In recent years, many countries have implemented legislative mandates that require researchers who accept public grants to make their published research results freely available online within a reasonable time period. While Canada has lagged, a growing number of funding agencies, including the Canadian Institutes of Health Research, the Canadian Cancer Society, and Genome Canada have adopted open access policies.

The result is unprecedented public access to cutting-edge research. There are now more than 5,000 peer-reviewed open access academic journals worldwide and more than 37 million articles freely available through Scientific Commons. An estimated 20 percent of the world's medical literature is openly accessible within two years of first publication. Nearly ten percent is immediately available.

Moreover, there is budding momentum behind open educational resources, or open access teaching materials. A growing number of governments foresee significant benefits – both economic and pedagogical – behind developing open educational resources that could supplement or replace conventional textbooks.

Notwithstanding the success stories, three major barriers remain. The first is a clear commitment to open access from all federal granting institutions. The principle should be made legally binding to all grant recipients – publicly funded research comes with open access strings attached.

The second is the need for broader campus support for open access. In recent months, many of the world's top universities - including Harvard, Stanford, MIT, and Cornell - have adopted open access strategies that feature mandatory open access policies within some faculties as well as financial support to absorb costs faced by researchers who wish to publish in open access journals.

Canadian universities may benefit from far more public funding than their U.S. counterparts, but they have been much more reluctant to adopt open access mandates. While there are some exceptions – Athabasca, Concordia, and Ottawa along with the library departments at York University and the University of Calgary have adopted open access policies - most have been strangely silent on the issue. Given the major investments by federal and provincial governments at Canadian universities, the time has come to pressure those institutions to adopt campus-wide open access policies.

Third, Canadian university publishers have been generally hostile toward open access. Leading university presses such as Oxford University Press and Yale University Press have experimented with open licences, but most Canadian presses have not.

This is particularly troubling given the public dollars that support university publishers. In 2007, the Canadian university presses received more than \$780,000 in financial support from the Department of Canadian Heritage, \$1.4 million from the Aid to Scholarly Publications Program, and another \$700,000 doled out from the Canadian Council for the Arts. Yet despite nearly \$3 million in annual taxpayer support from those three sources alone, most university presses have opposed open access strategies. Given those investments, the federal government should be pressuring recipients to adopt open access publishing policies.

d. Digitization

Promoting digital Canadian content also requires getting on with the job of creating a national digital library by digitizing millions of Canadian books for the benefit of Canadian authors and the broader public. Plans have languished to the point that it feels as if someone has hit the delete key on the prospect of a comprehensive Canadian digital library.

Canada's failure to keep pace was made readily apparent by the release in late August 2009 of a European consultation document on its digitization efforts. In September 2005, the European Union launched i2010, a digitization action plan. Several years later, Europeana debuted, a website that provides direct access to more than 4.6 million digitized books, newspapers, film clips, maps, photographs, and documents from across Europe. The site plans to host 10 million objects by the end of 2010.

The majority of the materials included to date are in the public domain – i.e., they are no longer covered by copyright and can be used and accessed by all. In fact, the European Commission has emphasized "works in the public domain should stay there once digitized and be made accessible through the Internet." It acknowledges, however, that this is not always the case since some groups claim rights to digitized copies of public domain works or charge for downloads.

The European consultation document grapples with difficult issues such as guaranteeing access to public domain works and identifying ways to improve access to works that are still subject to copyright protection but are out-of-print, or for which the copyright owner cannot be located.

By comparison, Canada seems stuck at the digitization starting gate. Library and Archives Canada was given responsibility for the issue but was unable to muster the necessary support for a comprehensive plan. The Department of Canadian Heritage, which would seem like a natural fit for a strategy designed to foster access to Canadian works, has funded a handful of small digitization efforts but has shown little interest in crafting a vision similar to Europeana.

Moreover, the government could also amend the legal deposit program that requires all Canadian publishers to provide the National Library with two copies of every newly

published book. By expanding the program's requirements to also include a digital copy, the government would effortlessly build a digital library featuring thousands of new books. Further, organizations such as the CBC and the National Film Board should be working to digitize thousands of hours of Canadian film, television shows, and radio programs.

e. Domain Names – Canadian Digital Space for Digital Content

Support for a Canadian digital content should extend beyond traditional funding programs. The Canadian Internet Registration Authority, which falls under the Industry Canada mandate, could use part of its forthcoming financial surplus (which could soon exceed \$1 million dollars annually) to assist with Internet policies or by granting every Canadian a free domain name to encourage their participation in the online world.

This approach is finding increasing favour with country-code top level domains around the world. In the United Kingdom, Nominet (which runs the dot-uk domain), has contributed millions of dollars to charitable organizations that help disadvantaged groups access the Internet. Similar programs are in place in Australia, which makes annual grants to projects for the benefit of the community. Other domain name agencies have concentrated on research and policy development. The Austrian agency funds an annual call for projects to enhance Internet access, the Netherlands' agency supports organizations focused on Internet security and innovation, while the Italian agency maintains a prize competition for student research.

Yet others have removed the financial barriers to domain registration by offering free registration to residents. Citizens of Rwanda and the Republic of the Congo are both entitled to free domain name registrations that run on local servers. In South Africa, nom.za is offered as a second-level domain freely to South Africans who cannot afford other .za domains.

As part of a national digital economy strategy, the role of the Canadian domain name administrator should not be forgotten.